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COMPUTATION OF AREAS OF TRIANGLES

B.A. Eng.

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U.S. Department of Agriculture

Rule: The area of any triangle is equal to the product of any two sides multiplied by the value indicated in this table for the angle between the sides.

Table of Natural Half-sine Values

Acute* : Angles : Degrees :	Value : to : Use :	Obtuse** : Angles : Degrees :	Acute : Angles : Degrees :	Value : to : Use :	Obtuse : Angles : Degrees :	Acute : Angles : Degrees :	Value : to : Use :	Obtuse : Angles : Degrees :
0	.000	180	10	.087	170	20	.171	160
0 1/4	.002	179 3/4	10 1/4	.089	169 3/4	20 1/4	.173	159 3/4
0 1/2	.004	179 1/2	10 1/2	.091	169 1/2	20 1/2	.175	159 1/2
0 3/4	.007	179 1/4	10 3/4	.093	169 1/4	20 3/4	.177	159 1/4
1	.009	179	11	.095	169	21	.179	159
1 1/4	.011	178 3/4	11 1/4	.098	168 3/4	21 1/4	.181	158 3/4
1 1/2	.013	178 1/2	11 1/2	.100	168 1/2	21 1/2	.183	158 1/2
1 3/4	.015	178 1/4	11 3/4	.102	168 1/4	21 3/4	.185	158 1/4
2	.017	178	12	.104	168	22	.187	158
2 1/4	.020	177 3/4	12 1/4	.106	167 3/4	22 1/4	.189	157 3/4
2 1/2	.022	177 1/2	12 1/2	.108	167 1/2	22 1/2	.191	157 1/2
2 3/4	.024	177 1/4	12 3/4	.110	167 1/4	22 3/4	.193	157 1/4
3	.026	177	13	.112	167	23	.195	157
3 1/4	.028	176 3/4	13 1/4	.115	166 3/4	23 1/4	.197	156 3/4
3 1/2	.031	176 1/2	13 1/2	.117	166 1/2	23 1/2	.199	156 1/2
3 3/4	.033	176 1/4	13 3/4	.119	166 1/4	23 3/4	.201	156 1/4
4	.035	176	14	.121	166	24	.203	156
4 1/4	.037	175 3/4	14 1/4	.123	165 3/4	24 1/4	.205	155 3/4
4 1/2	.039	175 1/2	14 1/2	.125	165 1/2	24 1/2	.207	155 1/2
4 3/4	.041	175 1/4	14 3/4	.127	165 1/4	24 3/4	.209	155 1/4
5	.044	175	15	.129	165	25	.211	155
5 1/4	.046	174 3/4	15 1/4	.132	164 3/4	25 1/4	.213	154 3/4
5 1/2	.048	174 1/2	15 1/2	.134	164 1/2	25 1/2	.215	154 1/2
5 3/4	.050	174 1/4	15 3/4	.136	164 1/4	25 3/4	.217	154 1/4
6	.052	174	16	.138	164	26	.219	154
6 1/4	.054	173 3/4	16 1/4	.140	163 3/4	26 1/4	.221	153 3/4
6 1/2	.057	173 1/2	16 1/2	.142	163 1/2	26 1/2	.223	153 1/2
6 3/4	.059	173 1/4	16 3/4	.144	163 1/4	26 3/4	.225	153 1/4
7	.061	173	17	.146	163	27	.227	153
7 1/4	.063	172 3/4	17 1/4	.148	162 3/4	27 1/4	.229	152 3/4
7 1/2	.065	172 1/2	17 1/2	.150	162 1/2	27 1/2	.231	152 1/2
7 3/4	.067	172 1/4	17 3/4	.152	162 1/4	27 3/4	.233	152 1/4
8	.070	172	18	.155	162	28	.235	152
8 1/4	.072	171 3/4	18 1/4	.157	161 3/4	28 1/4	.237	151 3/4
8 1/2	.074	171 1/2	18 1/2	.159	161 1/2	28 1/2	.239	151 1/2
8 3/4	.076	171 1/4	18 3/4	.161	161 1/4	28 3/4	.240	151 1/4
9	.078	171	19	.163	161	29	.242	151
9 1/4	.080	170 3/4	19 1/4	.165	160 3/4	29 1/4	.244	150 3/4
9 1/2	.083	170 1/2	19 1/2	.167	160 1/2	29 1/2	.246	150 1/2
9 3/4	.085	170 1/4	19 3/4	.169	160 1/4	29 3/4	.248	150 1/4

* Acute angles are smaller than right angles.

** Obtuse angles are larger than right angles.

Table of Natural Half-sine Values

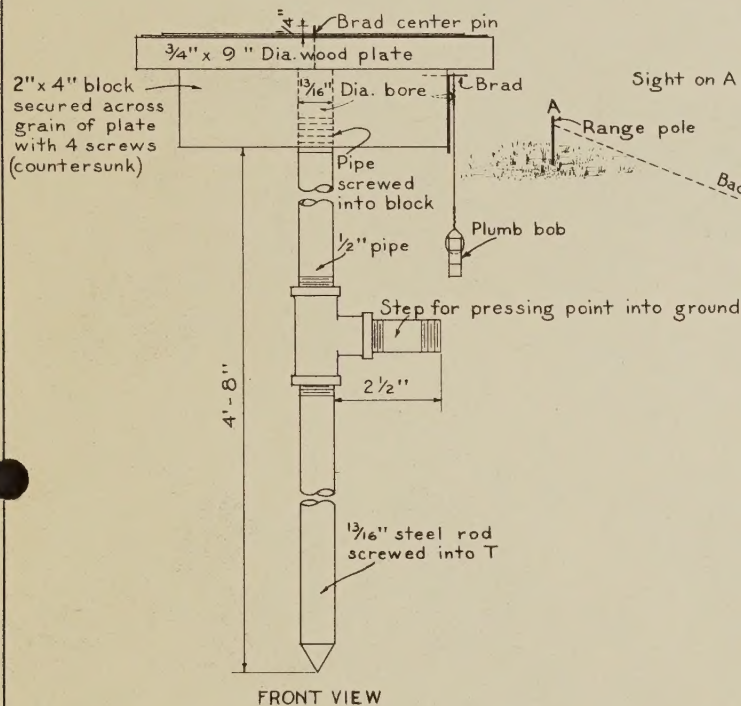
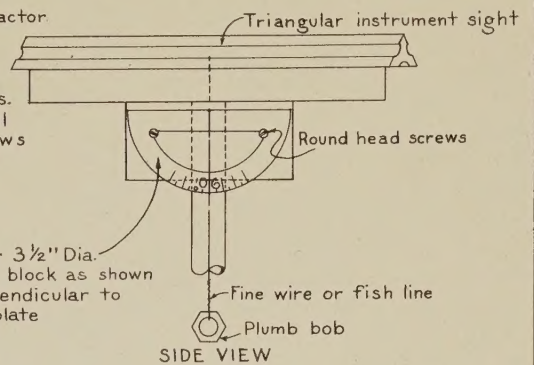
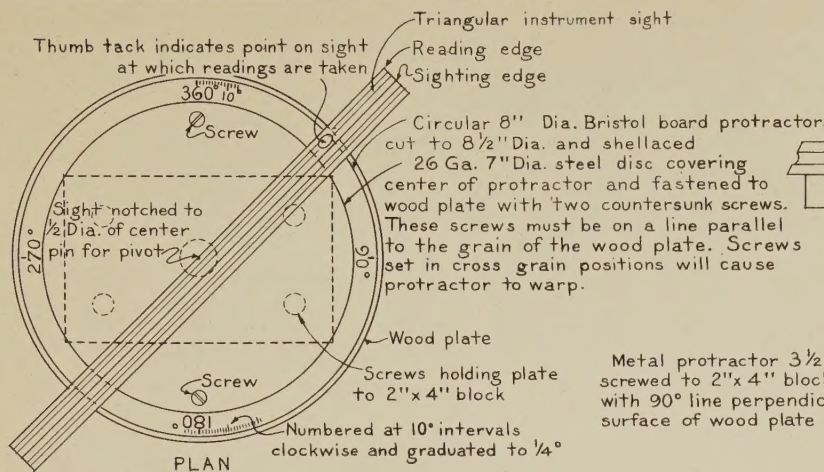
Acute Angles Degrees	Value to Use	Obtuse Angles Degrees	Acute Angles Degrees	Value to Use	Obtuse Angles Degrees	Acute Angles Degrees	Value to Use	Obtuse Angles Degrees
30	.250	150	40	.321	140	50	.383	130
30 $\frac{1}{4}$	.252	149 $\frac{3}{4}$	40 $\frac{1}{4}$	.323	139 $\frac{3}{4}$	50 $\frac{1}{4}$	.384	129 $\frac{3}{4}$
30 $\frac{1}{2}$	.254	149 $\frac{1}{2}$	40 $\frac{1}{2}$	.325	139 $\frac{1}{2}$	50 $\frac{1}{2}$	.386	129 $\frac{1}{2}$
30 $\frac{3}{4}$	.256	149 $\frac{1}{4}$	40 $\frac{3}{4}$	.326	139 $\frac{1}{4}$	50 $\frac{3}{4}$	.387	129 $\frac{1}{4}$
31	.258	149	41	.328	139	51	.389	129
31 $\frac{1}{4}$	.259	148 $\frac{3}{4}$	41 $\frac{1}{4}$	.330	138 $\frac{3}{4}$	51 $\frac{1}{4}$	.390	128 $\frac{3}{4}$
31 $\frac{1}{2}$	.261	148 $\frac{1}{2}$	41 $\frac{1}{2}$	.331	138 $\frac{1}{2}$	51 $\frac{1}{2}$	.391	128 $\frac{1}{2}$
31 $\frac{3}{4}$	.263	148 $\frac{1}{4}$	41 $\frac{3}{4}$	.333	138 $\frac{1}{4}$	51 $\frac{3}{4}$	.393	128 $\frac{1}{4}$
32	.265	148	42	.335	138	52	.394	128
32 $\frac{1}{4}$	.267	147 $\frac{3}{4}$	42 $\frac{1}{4}$	.336	137 $\frac{3}{4}$	52 $\frac{1}{4}$	.395	127 $\frac{3}{4}$
32 $\frac{1}{2}$	.269	147 $\frac{1}{2}$	42 $\frac{1}{2}$	.338	137 $\frac{1}{2}$	52 $\frac{1}{2}$	.397	127 $\frac{1}{2}$
32 $\frac{3}{4}$	.270	147 $\frac{1}{4}$	42 $\frac{3}{4}$	.339	137 $\frac{1}{4}$	52 $\frac{3}{4}$	.398	127 $\frac{1}{4}$
33	.272	147	43	.341	137	53	.399	127
33 $\frac{1}{4}$	.274	146 $\frac{3}{4}$	43 $\frac{1}{4}$	.343	136 $\frac{3}{4}$	53 $\frac{1}{4}$	.401	126 $\frac{3}{4}$
33 $\frac{1}{2}$	.276	146 $\frac{1}{2}$	43 $\frac{1}{2}$	.344	136 $\frac{1}{2}$	53 $\frac{1}{2}$	.402	126 $\frac{1}{2}$
33 $\frac{3}{4}$	.278	146 $\frac{1}{4}$	43 $\frac{3}{4}$	.346	136 $\frac{1}{4}$	53 $\frac{3}{4}$	.403	126 $\frac{1}{4}$
34	.280	146	44	.347	136	54	.405	126
34 $\frac{1}{4}$	.281	145 $\frac{3}{4}$	44 $\frac{1}{4}$	.349	135 $\frac{3}{4}$	54 $\frac{1}{4}$	.406	125 $\frac{3}{4}$
34 $\frac{1}{2}$	.283	145 $\frac{1}{2}$	44 $\frac{1}{2}$	.350	135 $\frac{1}{2}$	54 $\frac{1}{2}$	.407	125 $\frac{1}{2}$
34 $\frac{3}{4}$	.285	145 $\frac{1}{4}$	44 $\frac{3}{4}$	.352	135 $\frac{1}{4}$	54 $\frac{3}{4}$	.408	125 $\frac{1}{4}$
35	.287	145	45	.354	135	55	.410	125
35 $\frac{1}{4}$	.289	144 $\frac{3}{4}$	45 $\frac{1}{4}$	.355	134 $\frac{3}{4}$	55 $\frac{1}{4}$	.411	124 $\frac{3}{4}$
35 $\frac{1}{2}$	.290	144 $\frac{1}{2}$	45 $\frac{1}{2}$	.357	134 $\frac{1}{2}$	55 $\frac{1}{2}$	.412	124 $\frac{1}{2}$
35 $\frac{3}{4}$	.292	144 $\frac{1}{4}$	45 $\frac{3}{4}$	.358	134 $\frac{1}{4}$	55 $\frac{3}{4}$	.413	124 $\frac{1}{4}$
36	.294	144	46	.360	134	56	.415	124
36 $\frac{1}{4}$	.296	143 $\frac{3}{4}$	46 $\frac{1}{4}$	.361	133 $\frac{3}{4}$	56 $\frac{1}{4}$	.416	123 $\frac{3}{4}$
36 $\frac{1}{2}$	.297	143 $\frac{1}{2}$	46 $\frac{1}{2}$	.363	133 $\frac{1}{2}$	56 $\frac{1}{2}$	.417	123 $\frac{1}{2}$
36 $\frac{3}{4}$	.299	143 $\frac{1}{4}$	46 $\frac{3}{4}$	.364	133 $\frac{1}{4}$	56 $\frac{3}{4}$	.418	123 $\frac{1}{4}$
37	.301	143	47	.366	133	57	.419	123
37 $\frac{1}{4}$	.303	142 $\frac{3}{4}$	47 $\frac{1}{4}$	.367	132 $\frac{3}{4}$	57 $\frac{1}{4}$	.421	122 $\frac{3}{4}$
37 $\frac{1}{2}$	.304	142 $\frac{1}{2}$	47 $\frac{1}{2}$	.369	132 $\frac{1}{2}$	57 $\frac{1}{2}$	.422	122 $\frac{1}{2}$
37 $\frac{3}{4}$	.306	142 $\frac{1}{4}$	47 $\frac{3}{4}$	.370	132 $\frac{1}{4}$	57 $\frac{3}{4}$	.423	122 $\frac{1}{4}$
38	.308	142	48	.372	132	58	.424	122
38 $\frac{1}{4}$	.310	141 $\frac{3}{4}$	48 $\frac{1}{4}$	.373	131 $\frac{3}{4}$	58 $\frac{1}{4}$	.425	121 $\frac{3}{4}$
38 $\frac{1}{2}$	.311	141 $\frac{1}{2}$	48 $\frac{1}{2}$	.374	131 $\frac{1}{2}$	58 $\frac{1}{2}$	.426	121 $\frac{1}{2}$
38 $\frac{3}{4}$	.313	141 $\frac{1}{4}$	48 $\frac{3}{4}$	.376	131 $\frac{1}{4}$	58 $\frac{3}{4}$	.427	121 $\frac{1}{4}$
39	.315	141	49	.377	131	59	.429	121
39 $\frac{1}{4}$	.316	140 $\frac{3}{4}$	49 $\frac{1}{4}$	.379	130 $\frac{3}{4}$	59 $\frac{1}{4}$	.430	120 $\frac{3}{4}$
39 $\frac{1}{2}$	.318	140 $\frac{1}{2}$	49 $\frac{1}{2}$	.380	130 $\frac{1}{2}$	59 $\frac{1}{2}$	.431	120 $\frac{1}{2}$
39 $\frac{3}{4}$	.320	140 $\frac{1}{4}$	49 $\frac{3}{4}$	.382	130 $\frac{1}{4}$	59 $\frac{3}{4}$	.432	120 $\frac{1}{4}$

Table of Natural Logarithms

Natural Logarithm		Natural Logarithm		Natural Logarithm	
No.	Log.	No.	Log.	No.	Log.
1	.0000	101	.0043	201	.0092
2	.0018	102	.0044	202	.0093
3	.0026	103	.0045	203	.0094
4	.0034	104	.0046	204	.0095
5	.0042	105	.0047	205	.0096
6	.0050	106	.0048	206	.0097
7	.0058	107	.0049	207	.0098
8	.0066	108	.0050	208	.0099
9	.0074	109	.0051	209	.0100
10	.0082	110	.0052	210	.0101
11	.0090	111	.0053	211	.0102
12	.0097	112	.0054	212	.0103
13	.0105	113	.0055	213	.0104
14	.0113	114	.0056	214	.0105
15	.0121	115	.0057	215	.0106
16	.0129	116	.0058	216	.0107
17	.0137	117	.0059	217	.0108
18	.0145	118	.0060	218	.0109
19	.0153	119	.0061	219	.0110
20	.0161	120	.0062	220	.0111
21	.0169	121	.0063	221	.0112
22	.0177	122	.0064	222	.0113
23	.0185	123	.0065	223	.0114
24	.0193	124	.0066	224	.0115
25	.0201	125	.0067	225	.0116
26	.0209	126	.0068	226	.0117
27	.0217	127	.0069	227	.0118
28	.0225	128	.0070	228	.0119
29	.0233	129	.0071	229	.0120
30	.0241	130	.0072	230	.0121
31	.0249	131	.0073	231	.0122
32	.0257	132	.0074	232	.0123
33	.0265	133	.0075	233	.0124
34	.0273	134	.0076	234	.0125
35	.0281	135	.0077	235	.0126
36	.0289	136	.0078	236	.0127
37	.0297	137	.0079	237	.0128
38	.0305	138	.0080	238	.0129
39	.0313	139	.0081	239	.0130
40	.0321	140	.0082	240	.0131
41	.0329	141	.0083	241	.0132
42	.0337	142	.0084	242	.0133
43	.0345	143	.0085	243	.0134
44	.0353	144	.0086	244	.0135
45	.0361	145	.0087	245	.0136
46	.0369	146	.0088	246	.0137
47	.0377	147	.0089	247	.0138
48	.0385	148	.0090	248	.0139
49	.0393	149	.0091	249	.0140
50	.0401	150	.0092	250	.0141
51	.0409	151	.0093	251	.0142
52	.0417	152	.0094	252	.0143
53	.0425	153	.0095	253	.0144
54	.0433	154	.0096	254	.0145
55	.0441	155	.0097	255	.0146
56	.0449	156	.0098	256	.0147
57	.0457	157	.0099	257	.0148
58	.0465	158	.0100	258	.0149
59	.0473	159	.0101	259	.0150
60	.0481	160	.0102	260	.0151
61	.0489	161	.0103	261	.0152
62	.0497	162	.0104	262	.0153
63	.0505	163	.0105	263	.0154
64	.0513	164	.0106	264	.0155
65	.0521	165	.0107	265	.0156
66	.0529	166	.0108	266	.0157
67	.0537	167	.0109	267	.0158
68	.0545	168	.0110	268	.0159
69	.0553	169	.0111	269	.0160
70	.0561	170	.0112	270	.0161
71	.0569	171	.0113	271	.0162
72	.0577	172	.0114	272	.0163
73	.0585	173	.0115	273	.0164
74	.0593	174	.0116	274	.0165
75	.0601	175	.0117	275	.0166
76	.0609	176	.0118	276	.0167
77	.0617	177	.0119	277	.0168
78	.0625	178	.0120	278	.0169
79	.0633	179	.0121	279	.0170
80	.0641	180	.0122	280	.0171
81	.0649	181	.0123	281	.0172
82	.0657	182	.0124	282	.0173
83	.0665	183	.0125	283	.0174
84	.0673	184	.0126	284	.0175
85	.0681	185	.0127	285	.0176
86	.0689	186	.0128	286	.0177
87	.0697	187	.0129	287	.0178
88	.0705	188	.0130	288	.0179
89	.0713	189	.0131	289	.0180
90	.0721	190	.0132	290	.0181
91	.0729	191	.0133	291	.0182
92	.0737	192	.0134	292	.0183
93	.0745	193	.0135	293	.0184
94	.0753	194	.0136	294	.0185
95	.0761	195	.0137	295	.0186
96	.0769	196	.0138	296	.0187
97	.0777	197	.0139	297	.0188
98	.0785	198	.0140	298	.0189
99	.0793	199	.0141	299	.0190
100	.0801	200	.0142	300	.0191

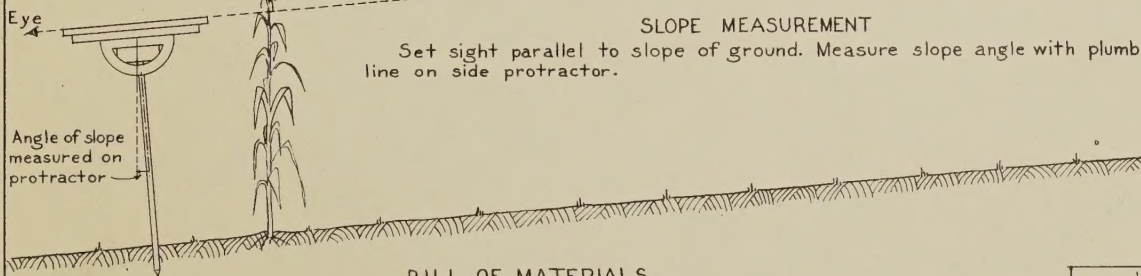
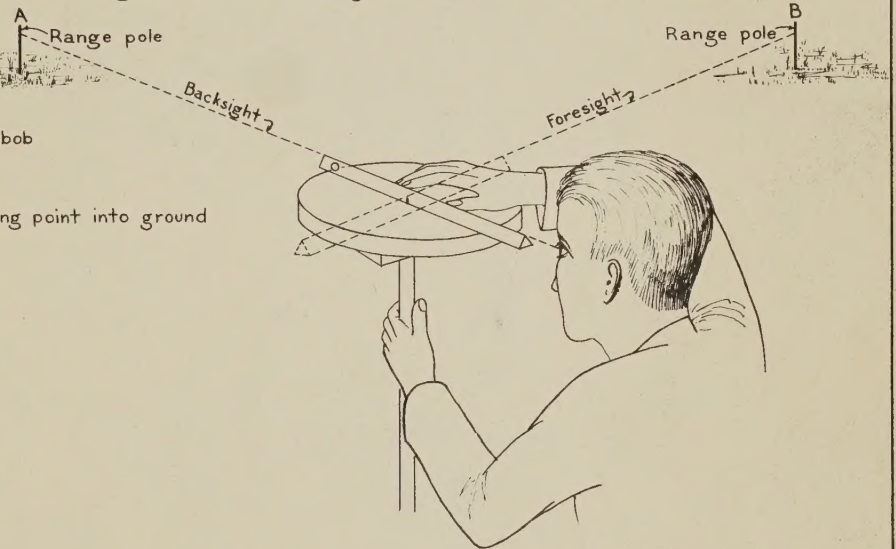
Table of Natural Half-sine Values

Acute Angles Degrees	Value to Use	Obtuse Angles Degrees	Acute Angles Degrees	Value to Use	Obtuse Angles Degrees	Acute Angles Degrees	Value to Use	Obtuse Angles Degrees
60	.433	120	70	.470	110	80	.492	100
60 $\frac{1}{4}$	.434	119 $\frac{3}{4}$	70 $\frac{1}{4}$	.471	109 $\frac{3}{4}$	80 $\frac{1}{4}$	.493	99 $\frac{3}{4}$
60 $\frac{1}{2}$	.435	119 $\frac{1}{2}$	70 $\frac{1}{2}$	.471	109 $\frac{1}{2}$	80 $\frac{1}{2}$	.493	99 $\frac{1}{2}$
60 $\frac{3}{4}$	.436	119 $\frac{1}{4}$	70 $\frac{3}{4}$	.472	109 $\frac{1}{4}$	80 $\frac{3}{4}$	.494	99 $\frac{1}{4}$
61	.437	119	71	.473	109	81	.494	99
61 $\frac{1}{4}$	.438	118 $\frac{3}{4}$	71 $\frac{1}{4}$	.473	108 $\frac{3}{4}$	81 $\frac{1}{4}$	.494	98 $\frac{3}{4}$
61 $\frac{1}{2}$	.439	118 $\frac{1}{2}$	71 $\frac{1}{2}$	.474	108 $\frac{1}{2}$	81 $\frac{1}{2}$	.495	98 $\frac{1}{2}$
61 $\frac{3}{4}$	.440	118 $\frac{1}{4}$	71 $\frac{3}{4}$	.475	108 $\frac{1}{4}$	81 $\frac{3}{4}$	.495	98 $\frac{1}{4}$
62	.441	118	72	.476	108	82	.495	98
62 $\frac{1}{4}$	.442	117 $\frac{3}{4}$	72 $\frac{1}{4}$	.476	107 $\frac{3}{4}$	82 $\frac{1}{4}$	.495	97 $\frac{3}{4}$
62 $\frac{1}{2}$	.444	117 $\frac{1}{2}$	72 $\frac{1}{2}$	.477	107 $\frac{1}{2}$	82 $\frac{1}{2}$	.496	97 $\frac{1}{2}$
62 $\frac{3}{4}$	.445	117 $\frac{1}{4}$	72 $\frac{3}{4}$	.478	107 $\frac{1}{4}$	82 $\frac{3}{4}$	.496	97 $\frac{1}{4}$
63	.446	117	73	.478	107	83	.496	97
63 $\frac{1}{4}$	.446	116 $\frac{3}{4}$	73 $\frac{1}{4}$	.479	106 $\frac{3}{4}$	83 $\frac{1}{4}$	.497	96 $\frac{3}{4}$
63 $\frac{1}{2}$	.447	116 $\frac{1}{2}$	73 $\frac{1}{2}$	.479	106 $\frac{1}{2}$	83 $\frac{1}{2}$	.497	96 $\frac{1}{2}$
63 $\frac{3}{4}$	.448	116 $\frac{1}{4}$	73 $\frac{3}{4}$	.480	106 $\frac{1}{4}$	83 $\frac{3}{4}$	.497	96 $\frac{1}{4}$
64	.449	116	74	.481	106	84	.497	96
64 $\frac{1}{4}$	.450	115 $\frac{3}{4}$	74 $\frac{1}{4}$	.481	105 $\frac{3}{4}$	84 $\frac{1}{4}$	.497	95 $\frac{3}{4}$
64 $\frac{1}{2}$	.451	115 $\frac{1}{2}$	74 $\frac{1}{2}$	.482	105 $\frac{1}{2}$	84 $\frac{1}{2}$	.498	95 $\frac{1}{2}$
64 $\frac{3}{4}$	.452	115 $\frac{1}{4}$	74 $\frac{3}{4}$	.482	105 $\frac{1}{4}$	84 $\frac{3}{4}$	.498	95 $\frac{1}{4}$
65	.453	115	75	.483	105	85	.498	95
65 $\frac{1}{4}$	.454	114 $\frac{3}{4}$	75 $\frac{1}{4}$	.484	104 $\frac{3}{4}$	85 $\frac{1}{4}$	.498	94 $\frac{3}{4}$
65 $\frac{1}{2}$	.455	114 $\frac{1}{2}$	75 $\frac{1}{2}$	.484	104 $\frac{1}{2}$	85 $\frac{1}{2}$	.498	94 $\frac{1}{2}$
65 $\frac{3}{4}$	.456	114 $\frac{1}{4}$	75 $\frac{3}{4}$	.485	104 $\frac{1}{4}$	85 $\frac{3}{4}$	.499	94 $\frac{1}{4}$
66	.457	114	76	.485	104	86	.499	94
66 $\frac{1}{4}$	.458	113 $\frac{3}{4}$	76 $\frac{1}{4}$	.486	103 $\frac{3}{4}$	86 $\frac{1}{4}$	.499	93 $\frac{3}{4}$
66 $\frac{1}{2}$	.459	113 $\frac{1}{2}$	76 $\frac{1}{2}$	.486	103 $\frac{1}{2}$	86 $\frac{1}{2}$	.499	93 $\frac{1}{2}$
66 $\frac{3}{4}$	.459	113 $\frac{1}{4}$	76 $\frac{3}{4}$	.487	103 $\frac{1}{4}$	86 $\frac{3}{4}$	.499	93 $\frac{1}{4}$
67	.460	113	77	.487	103	87	.499	93
67 $\frac{1}{4}$	.461	112 $\frac{3}{4}$	77 $\frac{1}{4}$	.488	102 $\frac{3}{4}$	87 $\frac{1}{4}$	.499	92 $\frac{3}{4}$
67 $\frac{1}{2}$	.462	112 $\frac{1}{2}$	77 $\frac{1}{2}$	.488	102 $\frac{1}{2}$	87 $\frac{1}{2}$	.500	92 $\frac{1}{2}$
67 $\frac{3}{4}$	.463	112 $\frac{1}{4}$	77 $\frac{3}{4}$	.489	102 $\frac{1}{4}$	87 $\frac{3}{4}$	.500	92 $\frac{1}{4}$
68	.464	112	78	.489	102	88	.500	92
68 $\frac{1}{4}$	.464	111 $\frac{3}{4}$	78 $\frac{1}{4}$	.490	101 $\frac{3}{4}$	88 $\frac{1}{4}$	.500	91 $\frac{3}{4}$
68 $\frac{1}{2}$	.465	111 $\frac{1}{2}$	78 $\frac{1}{2}$	.490	101 $\frac{1}{2}$	88 $\frac{1}{2}$	.500	91 $\frac{1}{2}$
68 $\frac{3}{4}$	.466	111 $\frac{1}{4}$	78 $\frac{3}{4}$	.490	101 $\frac{1}{4}$	88 $\frac{3}{4}$	.500	91 $\frac{1}{4}$
69	.467	111	79	.491	101	89	.500	91
69 $\frac{1}{4}$	.468	110 $\frac{3}{4}$	79 $\frac{1}{4}$	.491	100 $\frac{3}{4}$	89 $\frac{1}{4}$	.500	90 $\frac{3}{4}$
69 $\frac{1}{2}$	.468	110 $\frac{1}{2}$	79 $\frac{1}{2}$	.492	100 $\frac{1}{2}$	89 $\frac{1}{2}$	.500	90 $\frac{1}{2}$
69 $\frac{3}{4}$	.469	110 $\frac{1}{4}$	79 $\frac{3}{4}$	.492	100 $\frac{1}{4}$	89 $\frac{3}{4}$	.500	90 $\frac{1}{4}$
						90	.500	90



ANGLE MEASUREMENT

Sight on A with 0° reading, then sight on B to measure the angle



BILL OF MATERIALS

1-Triangular boxwood scale (12") for instrument sight
Thumbtack (to mark index point on scale)
1-Pc. 26 Ga. Sheet metal 7" diameter
1-Circular bristol board protractor 8" diameter
1-3/2" semicircular metal protractor
1-Pc. 3/4" circular wood plate 9" diameter
1-Pc. 2"x4" wood 6" long
1-Plumb bob

1-Pc. St'd. 1/2" pipe 3'-10" long threaded ends
1-St'd. 1/2"x1/2" pipe T
1-St'd. 1/2" pipe nipple 2" long
1-1 1/16" steel rod 10" long one end threaded
2-No. 1 round head wood screws 1/2" long
2-No. 1 flat head wood screws 1/2" long
4-No. 12 flat head wood screws 1 3/4" long
2-No. 16 Ga. wire brads 1" long

U.S. DEPARTMENT OF AGRICULTURE			
BUREAU OF AGRICULTURAL ENGINEERING			
DIVISION OF PLANS AND SERVICE			
SIMPLE SURVEY INSTRUMENT			
Scale:	Checked	SHEET 1 OF 1	
Drawn M.P. Toone	Checked	SERIAL No.	
Traced M.P. Toone	Checked	2870	
Approved			

DATE: March 1934

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